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TWO VASCULAR PLANT SPECIES NEW TO THE ALABAMA FLORA

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ABSTRACT

Based on recent collections, *Astragalus nuttallianus* and *Centaurium tenuiflorum* are documented as new to the Alabama flora. The first is native to the USA but perhaps not to Alabama although it occurs in a Black Belt prairie. The second is native to Europe, western Asia, and northern Africa; it was found at the muddy drawdown margin of a man-made pond.

KEYWORDS: Alabama, *Astragalus nuttallianus*, Fabaceae, *Centaurium tenuiflorum*, Gentianaceae.

Botanical field work in Alabama has produced records documenting two naturalized species not previously known from the state. Both taxa were determined to be new to Alabama based on their absence from a recently published comprehensive account of the state's flora (Kral et al. 2011), the Alabama Plant Atlas (Kral et al. 2013), and the North American Plant Atlas (BONAP 2013).

Astragalus nuttallianus DC. (Fabaceae)

Voucher specimen: **USA. Alabama**. Sumter Co.: 2.7 air mi. E of Livingston, on private land N of Alabama Hwy 28 ca. 1.0 air mi N of jct with Alabama Hwy 28 and Co. Rd. 21 (Bluffport Rd.), near the head of Jug Branch, 32.58405° -88.14192°, 28 Apr 2013, *B.R. Keener 7796 with P. Hall* (UWAL; duplicates to be distributed).

The voucher specimen (Fig. 1) was collected in a classic Blackland Prairie situation typical of the Black Belt of Alabama. The substrate consisted of intermittent calcareous chalk exposures among areas of thin soil over chalk. The site was generally open, with scattered small to large eastern red cedars and assorted grasses, sedges, and other herbaceous prairie type vegetation. The locality was somewhat disturbed, due to the presence of an old primitive road. The *Astragalus* plants were very common in the area, covering ca. 0.5 ha.

Astragalus nuttallianus sensu lato is a species found mainly in the southwestern USA and northern Mexico (Isley 1998). It is a fairly widespread species, stretching from California and Nevada east to Little River and Washington counties in western Arkansas and Cameron Parish in southwestern Louisiana (Isley 1998; BONAP 2013). It is also an extremely variable species, as indicated by Isley's (1998) treatment of the genus for the USA. In that treatment, he recognized seven varieties based on a suite of characters including leaflet apex type, length of inflorescence axis, fruit vestiture, and others.

The addition of *Astragalus nuttallianus* to the Alabama flora brings the total number of *Astragalus* species occurring in the state to five. The other species, all native and of conservation concern (ALNHP 2012), include *A. canadensis* L., *A. obcordatus* Ell., *A. tennesseensis* A. Gray, and *A. villosus* Michx. (Kral et al 2013).

The Alabama material (Fig. 1) appears to be identifiable with var. *nuttallianus,* since it bears obtuse to retuse leaflet apices, non-elongating inflorescences in fruit, and glabrous legumes. This

variety is the easternmost variety of the seven recognized by Isley and has a range that includes Texas, Oklahoma, Kansas, and the aforementioned eastern limits in Arkansas and Louisiana. The new locality for *Astragalus nuttallianus* in western Alabama is over 480 kilometers east of the previously known eastern limits.

Figure 1. *Astragalus nuttallianus* in Sumter County, Alabama (*Keener 7796*).

Astragalus nuttallianus is most likely not native to the Alabama flora due to its sizable disjunction from the native range and the disturbed situation in which it was found. Isley (1998) indicated that *A. nuttallianus* var. *nuttallianus* most frequently occurs in calcareous soils of prairies, open woodlands, fields, pastures, and disturbed ruderal habitats. These types of habitats are extremely common in the Black Belt of Alabama, which may indicate that *A. nuttallianus* var. *nuttallianus* is set to become an additional "Black Belt weed," a term informally assigned by Alabama botanists to non-native taxa that, when found in the state, are almost exclusively in the Black Belt.

Centaurium tenuiflorum (Hoffmanns. & Link) Fritsch ex Janch. (Gentianaceae)

Voucher specimen: **USA. Alabama**. Dallas Co.: 1.75 air mi WSW of Safford, area ca. 0.1 mi. N of Alabama Hwy 66, ca. 0.7 mi. W of jct. with Alabama Hwy 5, 32.280443° -87.400672°, 18 Jun 2011, *B.R. Keener 6513 with W. Webb* (UWAL; duplicates to be distributed).

This collection (Fig. 2) was made along the muddy drawdown margin of a man-made pond at the edge of a Blackland Prairie. The species was common at this location.

Figure 2. *Centaurium tenuiflorum* in Dallas County, Alabama (*Keener 6513*).

Centaurium tenuiflorum, a species native to Europe, western Asia, and northern Africa, has occurred in North America since at least 1896. However, it was not reported until 1990 due to taxonomic confusion with other exotic species of *Centaurium* and closely related native species now treated in the genus *Zeltnera*. For a recent account of this confusion, see Pringle (2010).

Centaurium tenuiflorum has two centers of naturalization in North America: (1) the Pacific states of California and Oregon, and (2) the Gulf states of Texas, Louisiana, and Mississippi (Holmes & Wivagg 1996; Pringle 2010), with a recent report from Oklahoma (Mink et al 2011). The new collection from Alabama extends the species' distribution along the Gulf Coastal Plain, making it the easternmost record in North America.

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